

SEQUENCE LISTING

<110> Rangel-Aldao, Rafael
Bravo, Adriana
Sanchez, Beatriz
Galindo-Castro, Ivan

<120> Malt Beverage Having Stabilized Flavor and Methods of Production
Thereof

<130> 1390.0070003

<140>

<141> 1998-09-09

<150> 60/058,398

<151> 1997-09-09

<160> 6

<170> PatentIn Ver. 2.0

<210> 1

<211> 400

<212> PRT

<213> Saccharomyces carlsbergensis

<400> 1

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Leu	Phe	Lys	Pro	Ile	Lys	Ile	Gly	Asn	Asn	Glu	Leu	Leu	His	Arg	Ala	
			20					25					30			
Val	Ile	Pro	Pro	Leu	Thr	Arg	Met	Arg	Ala	Leu	His	Pro	Gly	Asn	Ile	
		35					40					45				
Pro	Asn	Arg	Asp	Trp	Ala	Val	Glu	Tyr	Tyr	Thr	Gln	Arg	Ala	Gln	Arg	
	50				55						60					
Pro	Gly	Thr	Met	Ile	Ile	Thr	Glu	Gly	Ala	Phe	Ile	Ser	Pro	Gln	Ala	
65				70						75				80		
Gly	Gly	Tyr	Asp	Asn	Ala	Pro	Gly	Val	Trp	Ser	Glu	Glu	Gln	Met	Val	
			85					90					95			
Glu	Trp	Thr	Lys	Ile	Phe	Asn	Ala	Ile	His	Glu	Lys	Lys	Ser	Phe	Val	
		100						105					110			
Trp	Val	Gln	Leu	Trp	Val	Leu	Gly	Trp	Ala	Ala	Phe	Pro	Asp	Asn	Leu	
	115						120					125				
Ala	Arg	Asp	Gly	Leu	Arg	Tyr	Asp	Ser	Ala	Ser	Asp	Asn	Val	Phe	Met	
	130					135					140					
Asp	Ala	Glu	Gln	Glu	Ala	Lys	Ala	Lys	Lys	Ala	Asn	Asn	Pro	Gln	His	
145					150					155					160	

Ser Leu Thr Lys Asp Glu Ile Lys Gln Tyr Ile Lys Glu Tyr Val Gln
165 170 175
Ala Ala Lys Asn Ser Ile Ala Ala Gly Ala Asp Gly Val Glu Ile His
180 185 190
Ser Ala Asn Gly Tyr Leu Leu Asn Gln Phe Leu Asp Pro His Ser Asn
195 200 205
Thr Arg Thr Asp Glu Tyr Gly Gly Ser Ile Glu Asn Arg Ala Arg Phe
210 215 220
Thr Leu Glu Val Val Asp Ala Leu Val Glu Ala Ile Gly His Glu Lys
225 230 235 240
Val Gly Leu Arg Leu Ser Pro Tyr Gly Val Phe Asn Ser Met Ser Gly
245 250 255
Gly Ala Glu Thr Gly Ile Val Ala Gln Tyr Ala Tyr Val Ala Gly Glu
260 265 270
Leu Glu Lys Arg Ala Lys Ala Gly Lys Arg Leu Ala Phe Val His Leu
275 280 285
Val Glu Pro Arg Val Thr Asn Pro Phe Leu Thr Glu Gly Glu Gly Glu
290 295 300
Tyr Glu Gly Gly Ser Asn Asp Phe Val Tyr Ser Ile Trp Lys Gly Pro
305 310 315 320
Val Ile Arg Ala Gly Asn Phe Ala Leu His Pro Glu Val Val Arg Glu
325 330 335
Glu Val Lys Asp Lys Arg Thr Leu Ile Gly Tyr Gly Arg Phe Phe Ile
340 345 350
Ser Asn Pro Asp Leu Val Asp Arg Leu Glu Lys Gly Leu Pro Leu Asn
355 360 365
Lys Tyr Asp Arg Asp Thr Phe Tyr Gln Met Ser Ala Trp Gly Tyr Ile
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Asp Tyr Pro Thr Tyr Glu Glu Ala Leu Lys Leu Gly Trp Asp Lys Lys
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<211> 400

<212> PRT

<213> *Saccharomyces carlsbergensis*

<400> 2

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Leu Phe Lys Pro Ile Lys Ile Gly Asn Asn Glu Leu Leu His Arg Ala
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Val Ile Pro Pro Leu Thr Arg Met Arg Ala Gln His Pro Gly Asn Ile
35 40 45
Pro Asn Arg Asp Trp Ala Val Glu Tyr Tyr Ala Gln Arg Ala Gln Arg
50 55 60
Pro Gly Thr Leu Ile Ile Thr Glu Gly Thr Phe Pro Ser Pro Gln Ser
65 70 75 80
Gly Gly Tyr Asp Asn Ala Pro Gly Ile Trp Ser Glu Glu Gln Ile Lys
85 90 95
Glu Trp Thr Lys Ile Phe Lys Ala Ile His Glu Asn Lys Ser Phe Ala
100 105 110
Trp Val Gln Leu Trp Val Leu Gly Trp Ala Ala Phe Pro Asp Thr Leu

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115 120 125
Ala Arg Asp Gly Leu Arg Tyr Asp Ser Ala Ser Asp Asn Val Tyr Met
130 135 140
Asn Ala Glu Gln Glu Glu Lys Ala Lys Lys Ala Asn Asn Pro Gln His
145 150 155 160
Ser Ile Thr Lys Asp Glu Ile Lys Gln Tyr Val Lys Glu Tyr Val Gln
165 170 175
Ala Ala Lys Asn Ser Ile Ala Ala Gly Ala Asp Gly Val Glu Ile His
180 185 190
Ser Ala Asn Gly Tyr Leu Leu Asn Gln Phe Leu Asp Pro His Ser Asn
195 200 205
Asn Arg Thr Asp Glu Tyr Gly Gly Ser Ile Glu Asn Arg Ala Arg Phe
210 215 220
Thr Leu Glu Val Val Asp Ala Val Val Asp Ala Ile Gly Pro Glu Lys
225 230 235 240
Val Gly Leu Arg Leu Ser Pro Tyr Gly Val Phe Asn Ser Met Ser Gly
245 250 255
Gly Ala Glu Thr Gly Ile Val Ala Gln Tyr Ala Tyr Val Leu Gly Glu
260 265 270
Leu Glu Arg Arg Ala Lys Ala Gly Lys Arg Leu Ala Phe Val His Leu
275 280 285
Val Glu Pro Arg Val Thr Asn Pro Phe Leu Thr Glu Gly Glu Gly Glu
290 295 300
Tyr Asn Gly Gly Ser Asn Lys Phe Ala Tyr Ser Ile Trp Lys Gly Pro
305 310 315 320
Ile Ile Arg Ala Gly Asn Phe Ala Leu His Pro Glu Val Val Arg Glu
325 330 335
Glu Val Lys Asp Pro Arg Thr Leu Ile Gly Tyr Gly Arg Phe Phe Ile
340 345 350
Ser Asn Pro Asp Leu Val Asp Arg Leu Glu Lys Gly Leu Pro Leu Asn
355 360 365
Lys Tyr Asp Arg Asp Thr Phe Tyr Lys Met Ser Ala Glu Gly Tyr Ile
370 375 380
Asp Tyr Pro Thr Tyr Glu Glu Ala Leu Lys Leu Gly Trp Asp Lys Asn
385 390 395 400

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<211> 400

<212> PRT

<213> *Saccharomyces carlsbergensis*

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Leu Phe Glu Pro Ile Lys Ile Gly Asn Thr Gln Leu Ala His Arg Ala
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Val Met Pro Pro Leu Thr Arg Met Arg Ala Thr His Pro Gly Asn Ile
35 40 45
Pro Asn Lys Glu Trp Ala Ala Val Tyr Tyr Gly Gln Arg Ala Gln Arg
50 55 60

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Pro Gly Thr Met Ile Ile Thr Glu Gly Thr Phe Ile Ser Pro Gln Ala
65 70 75 80
Gly Gly Tyr Asp Asn Ala Pro Gly Ile Trp Ser Asp Glu Gln Val Ala
85 90 95
Glu Trp Lys Asn Ile Phe Leu Ala Ile His Asp Cys Gln Ser Phe Ala
100 105 110
Trp Val Gln Leu Trp Ser Leu Gly Trp Ala Ser Phe Pro Asp Val Leu
115 120 125
Ala Arg Asp Gly Leu Arg Tyr Asp Cys Ala Ser Asp Arg Val Tyr Met
130 135 140
Asn Ala Thr Leu Gln Glu Lys Ala Lys Asp Ala Asn Asn Leu Glu His
145 150 155 160
Ser Leu Thr Lys Asp Asp Ile Lys Gln Tyr Ile Lys Asp Tyr Ile His
165 170 175
Ala Ala Lys Asn Ser Ile Ala Ala Gly Ala Asp Gly Val Glu Ile His
180 185 190
Ser Ala Asn Gly Tyr Leu Leu Asn Gln Phe Leu Asp Pro His Ser Asn
195 200 205
Lys Arg Thr Asp Glu Tyr Gly Gly Thr Ile Glu Asn Arg Ala Arg Phe
210 215 220
Thr Leu Glu Val Val Asp Ala Leu Ile Glu Thr Ile Gly Pro Glu Arg
225 230 235 240
Val Gly Leu Arg Leu Ser Pro Tyr Gly Thr Phe Asn Ser Met Ser Gly
245 250 255
Gly Ala Glu Pro Gly Ile Ile Ala Gln Tyr Ser Tyr Val Leu Gly Glu
260 265 270
Leu Glu Lys Arg Ala Lys Ala Gly Lys Arg Leu Ala Phe Val His Leu
275 280 285
Val Glu Pro Arg Val Thr Asp Pro Ser Leu Val Glu Gly Glu Gly Glu
290 295 300
Tyr Ser Glu Gly Thr Asn Asp Phe Ala Tyr Ser Ile Trp Lys Gly Pro
305 310 315 320
Ile Ile Arg Ala Gly Asn Tyr Ala Leu His Pro Glu Val Val Arg Glu
325 330 335
Gln Val Lys Asp Pro Arg Thr Leu Ile Gly Tyr Gly Arg Phe Phe Ile
340 345 350
Ser Asn Pro Asp Leu Val Tyr Arg Leu Glu Glu Gly Leu Pro Leu Asn
355 360 365
Lys Tyr Asp Arg Ser Thr Phe Tyr Thr Met Ser Ala Glu Gly Tyr Thr
370 375 380
Asp Tyr Pro Thr Tyr Glu Ala Val Asp Leu Gly Trp Asn Lys Asn
385 390 395 400

<210> 4

<211> 30

<212> PRT

<213> *Saccharomyces carlsbergensis*

<400> 4

Met Pro Phe Val Lys Asp Phe Lys Pro Gln Ala Leu Gly Asp Thr Asn
1 5 10 15
Leu Phe Lys Pro Ile Lys Ile Gly Asn Asn Glu Leu Leu His

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<210> 5

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<212> DNA

<213> Artificial sequence

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<223> Description of artificial sequence: synthetic oligonucleotide

<400> 5

ggaattcatg ccatttggtta aggac

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<210> 6

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<212> DNA

<213> Artificial sequence

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<223> Description of artificial sequence: synthetic oligonucleotide

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